

PATENT COOPERATION TREATY



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 0394	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IN2003/000433	International filing date (day/month/year) 31.12.2003	Priority date (day/month/year) 31.12.2003
International Patent Classification (IPC) or both national classification and IPC A23L2/10		
Applicant COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 29.07.2005	Date of completion of this report 07.02.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Muller, I Telephone No. +49 89 2399-8716 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IN2003/000433

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-6 as originally filed

Claims, Numbers

1-16 as originally filed

Drawings, Sheets

1/2, 2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IN2003/000433**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	1-16
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IN2003/000433

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: DATABASE FSTA [Online] INTERNATIONAL FOOD INFORMATION SERVICE (IFIS), FRANKFURT-MAIN, DE; 2000, SHRESTHRA G L: "Processing of wild Bael fruit for rural employment and income generation." XP002296547 Database accession no. 2001-00-j0481
D2: DATABASE FSTA [Online] INTERNATIONAL FOOD INFORMATION SERVICE (IFIS), FRANKFURT-MAIN, DE; 1979, ROY S K ET AL: "(In 'Proceedings of the First Indian Convention of Food Scientists and Technologists' ((see FSTA (1979) 11 12A871)).)" XP002296548 Database accession no. 79-3-12-j2075
D3: US-A-4 664 920 (MCKAY RANDAL P ET AL) 12 May 1987 (1987-05-12)
D4: US-A-4 112 130 (GUPTA ASHIS S) 5 September 1978 (1978-09-05)
D5: US 2002/102336 A1 (MANN DOUGLAS G) 1 August 2002 (2002-08-01).

2. D1 and D2 disclose processing of bael fruit to for example fruit powder. D1 (cf. abstract) discloses pulp extraction, drying the pulp to less than 4% moisture and grinding. D2 does not provide any detailed process. Similar to D1, the applicant cites on page 1 of the present description (cf. lines 31-34) a preparation of bael pulp powder in which the drying of the pulp is specifically done with SO₂.

D3-D5 relate to the preparation of fruit powders (in D3 from fruit solids, flavours or other food ingredients, in D4 from orange juice, in D5 fruit juice or concentrates) in which the fruit ingredients are stabilized, then spray-dried. No reference is made to bael fruit.

Hence, claim 1 meets the requirement of novelty in accordance with Art. 33(2) PCT.

3. In D4, examples 1-7, orange juice powder is prepared by drying a slurry of water, orange juice solids (preferably orange juice concentrate, cf. col. 3, l. 30-34) and with carbohydrates as drying aid (maltodextrins, cf. col. 3, l. 39-52).
In D5 (example 1 and 2, paragraphs 11, 14 and 15) the fruit juice powder is prepared by stabilizing the fruit juice or fruit juice concentrate with a fixative liquid blend containing magnesium hydroxide, an organic acid, guar gum or arabic gum, then spray drying. Alternatively, natural fruit fibers such as cranberry fibers from which the

juice has already been expressed can be mixed with the liquid mixture prior to drying. D3 discloses a method for fixing food ingredients (for example fruit juice solids or flavours etc.) by mixing for example the fruit juice concentrate with an aqueous solution of a magnesium salt of monobasic, dibasic or tribasic acids, alternatively with a magnesium compound such as magnesium carbonate from which the magnesium salt of an acid can be directly formed in the acid containing juice (col 1, l. 67- col. 2, l. 51), then spray drying. The examples 1-3 and 5 disclose the preparation of fruit or vegetable powder from orange or lemon juice concentrate (between 50 and 60°brix or tomato paste (25°brix).

D3 is considered as closest prior art document.

Present claim 1 differs from D3 in that as starting product bael fruit pulp is extracted, mixed with water, filtered, mixed specifically with magnesium carbonate and water to get a final concentration of 12°brix, homogenised under specific pressure before spray drying.

The problem to be solved by the present invention may be regarded as an alternative process to prepare bael fruit powder.

Even though steps like pulp extraction, filtration, adjustment of the °brix and homogenisation are conventional steps in juice industry, neither hint nor suggestion can be seen from the teaching of D3 in combination with D1, D2 or the citation reference on page 1 (last paragraph) of the present description referring to the preparation of bael fruit powder that would guide the skilled man to apply the process of D3 to bael fruit pulp, choosing specifically magnesium carbonate and combine this with pulp filtration, dilution, specific °brix adjustment and homogenisation in a specific pressure range prior to spray-drying in order to provide the process of claim 1 in order to produce a bael fruit powder with acceptable colour and shelf life.

Hence, the subject-matter of claim 1 involves an inventive step (Art. 33(3) PCT).

4. Claims 2-16 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step (Art. 33(2) and (3) PCT).
5. The subject-matter of the claims 1-16 is applicable in the food industry (Art. 33(4) PCT).